

# Xuanjun Chen

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## Education

### National Taiwan University (NTU)

PH.D. IN COMMUNICATION ENGINEERING, EECS COLLEGE (GPA 4.30/4.30)

M.S. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING (GPA: 4.19/4.30)

- **Advisors:** Prof. [Jyh-Shing Roger Jang](#) and Prof. [Hung-yi Lee](#)

Taipei, Taiwan

Sep. 2023 - Present

Sep. 2020 - Jan. 2023

### National Taiwan University of Science and Technology (NTUST)

B.S. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING (GPA: 4.11/4.30)

Taipei, Taiwan

Sep. 2018 - Jun. 2020

## Experience

### Speech Processing and Machine Learning Lab, NTU

Taipei, Taiwan

RESEARCH ASSISTANT, Advisor: Prof. [Hung-yi Lee](#)

Aug. 2023 - Present

- **[Research]** Researched on **Neural Audio Codec Model** and **Multimodal Large Language Model**
  - Co-built a large-scale spoken language model benchmark, ensuring standardized evaluation tasks. [ICLR '25]
  - Co-built a neural audio codec benchmark [ACL Findings '24] and co-organize a neural audio codec challenge [SLT '24].
  - Contributed to an audio language modeling report comparing methodologies systematically. [arXiv '24]
  - Contributed to a technical report on spoken language models for neural audio codec evaluation. [arXiv '24]
- **[Project]** Leading a student AI team in **TAIHUCAIS: TAIwan HUmanities Conversational AI Knowledge Discovery System**
  - Lead over 10 students in research and engineering projects and collaborate with 7 interdisciplinary professors.
  - Develop a multi-agent system for humanities research scenarios based on Large Language Models [Demo].

### Multimedia Information Retrieval Lab, NTU

Taipei, Taiwan

RESEARCH ASSISTANT, Advisor: Prof. [Jyh-Shing Roger Jang](#)

Oct. 2020 - Present

- **[Research]** Researched on **Multimodal Biometric Authentication**. Co-Advisor: Prof. [Hung-yi Lee](#); Mentor: Dr. [Haibin Wu](#)
  - Built a large-scale neural audio codec-based Deepfake speech dataset [Submit to T-PAMI]
  - Defined a codec-based deepfake source tracing via neural audio codec taxonomy [Submit to Interspeech 2025]
  - Proposed a effective & efficient audio-visual active speaker detection model via Transformer distillation [ICASSP 2024]
  - Proposed a SingGraph model using music and speech foundation models for SingFake detection [Interspeech 2024]
  - Proposed neural codec-based adversarial sample detection method for speaker verification [Interspeech 2024]
  - Built a diffusion and flow-matching based deepfake speech dataset [SLT 2024]
  - Analyzed model vulnerabilities and proposed a Push-Pull loss function against adversarial attack [SLT 2022]
  - Proposed an effective and efficient anti-spoofing model via two-stage distillation schema [ISCA SPSC 2022].
- **[Research]** Researched on **Audio Generation**. Collaborated with Prof. [Yu Tsao](#) and Prof. [Yi-Hsuan Yang](#)
  - Speech Enhancement [ICASSP 2025]; Text-to-music Generation [Submit to ISMIR 2025]
  - Built a singer separation dataset for karaoke content generation [O-COCOSDA 2024].

## Honors

**First-author Publications:** 2 under review (T-PAMI, Interspeech '25); 1 × ICASSP, 2 × Interspeech, 1 × IEEE SLT, 1 × ISCA SPSC

2024	<b>Google Student Travel Grant</b> , Google LLC	Travel Grant
2024	<b>CTCI Foundation Bursary Award for Overseas Students</b> , Taiwan CTCI Foundation	Bursary Award
2020-2025	<b>Distinguished Academic Record Award (5 years)</b> , Taipei Kwong Tong Community Associations	Scholarship
2021	<b>Ranked 3rd of the logical access track of the ASVspoof 2021 challenge</b> , Interspeech 2021	3rd/42 Worldwide
2018-2020	<b>Certificate of Achievement (Top 5%, 3 semesters)</b> , NTUST	Scholarship
2017	<b>National Bronze &amp; Guangdong Provincial Gold Awards</b> , 3rd China College Internet Entrep. Comp.	3rd Nationwide
2016-2017	<b>National Encouragement Scholarship (only 3%) &amp; 3rd Prize of Academic Award (Top 20%)</b>	SZIT Scholarship

## Services

2023-Now	<b>Reviewer / Program Committee</b> , ACL (2024), EMNLP (2024), ICASSP (2023 - 2025), Interspeech (2025), COLING (2024 - 2025), MLSP (2024), IALP (2024), ECCV AVGenL (2024)
2023-Now	<b>Administrative Assistant</b> , NVIDIA-NTU Artificial Intelligence Joint Research Center, NTU
2024	<b>Invited Talker</b> , Topic: "Singing Voice Graph Modeling for SingFake Detection", Special Session: SVDD @ IEEE SLT 2024
2024	<b>Technical Committee</b> , Codec-SUPERB Challenge at IEEE 2024 Spoken Language Technology Workshop (SLT 2024)
2024-2025	<b>Teaching Assistant</b> , EE5200: <a href="#">Introduction to Generative AI (2024 Spr.)</a> and EE5184: <a href="#">Machine Learning (2025 Spr.)</a> , NTU

## Publications <sup>(† indicates equal contribution.)</sup>

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- [1] **Xuanjun Chen**<sup>†</sup>, Jiawei Du<sup>†</sup>, Haibin Wu, Lin Zhang, I-Ming Lin, I-Hsiang Chiu, Wenze Ren, Yuan Tseng, Yu Tsao, Jyh-Shing Roger Jang, Hung-yi Lee, “[CodecFake+: A Large-Scale Neural Audio Codec-based Deepfake Speech Dataset](#)” *Submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence, 2025.*
- [2] Chien-yu Huang, Wei-Chih Chen, Shu-wen Yang, Andy T. Liu, Chen-An Li, Yu-Xiang Lin, Wei-Cheng Tseng, Anuj Diwan, Yi-Jen Shih, Jiatong Shi, William Chen, **Xuanjun Chen**, et al., “[Dynamic-SUPERB Phase-2: A Collaboratively Expanding Benchmark for Measuring the Capabilities of Spoken Language Models with 180 Tasks](#),” *in ICLR 2025.*
- [3] Wenze Ren, Haibin Wu, Yi-Cheng Lin, **Xuanjun Chen**, Rong Chao, Kuo-Hsuan Hung, You-Jin Li, Wen-Yuan Ting, Hsin-Min Wang, Yu Tsao, “[Leveraging Joint Spectral and Spatial Learning with MAMBA for Multichannel Speech Enhancement](#),” *in Proc. IEEE Int. Conf. Acoust., Speech, Signal Process., 2025.*
- [4] Yu-Xiang Lin, Chih-Kai Yang, Wei-Chih Chen, Chen-An Li, Chien-yu Huang, **Xuanjun Chen**, Hung-yi Lee, “[A Preliminary Exploration with GPT-4o Voice Mode](#),” *Tech Report, February 2025.*
- [5] Chih-Kai Yang, Yu-Kuan Fu, Chen-An Li, Yi-Cheng Lin, Yu-Xiang Lin, Wei-Chih Chen, Ho Lam Chung, Chun-Yi Kuan, Wei-Ping Huang, Ke-Han Lu, Tzu-Quan Lin, Hsiu-Hsuan Wang, En-Pei Hu, Chan-Jan Hsu, Liang-Hsuan Tseng, I-Hsiang Chiu, Ulin Sanga, **Xuanjun Chen**, Po-chun Hsu, Shu-wen Yang, Hung-yi Lee, “[Building a Taiwanese Mandarin Spoken Language Model: A First Attempt](#),” *Tech Report, Nov. 2024.*
- [6] **Xuanjun Chen**, Haibin Wu, Jyh-Shing Roger Jang, Hung-yi Lee “[Singing Voice Graph Modeling for SingFake Detection](#),” *in Interspeech 2024, Kos Island, Greece, Sept 2024.*
- [7] **Xuanjun Chen**<sup>†</sup>, Jiawei Du<sup>†</sup>, Haibin Wu, Jyh-Shing Roger Jang, Hung-yi Lee “[Neural Codec-based Adversarial Sample Detection for Speaker Verification](#),” *in Interspeech 2024, Kos Island, Greece, Sept 2024.*
- [8] **Xuanjun Chen**, Haibin Wu, Chung-Che Wang, Hung-yi Lee, Jyh-Shing Roger Jang “[Multimodal Transformer Distillation for Audio-Visual Synchronization](#),” *in Proc. IEEE Int. Conf. Acoust., Speech, Signal Process., 2024.*
- [9] Haibin Wu, **Xuanjun Chen**, Yi-Cheng Lin, Kai-wei Chang, Ho-Lam Chung, Alexander H. Liu, Hung-yi Lee “[Towards audio language modeling-an overview](#),” *Overview Report, Feb. 2024.*
- [10] Haibin Wu, Ho-Lam Chung, Yi-Cheng Lin, Yuan-Kuei Wu, **Xuanjun Chen**, Yu-Chi Pai, Hsiu-Hsuan Wang, Kai-Wei Chang, Alexander H. Liu, Hung-yi Lee “[Codec-SUPERB: An In-Depth Analysis of Sound Codec Models](#),” *in Findings of the Association for Computational Linguistics ACL 2024, Bangkok, Thailand, Aug 2024.*
- [11] Haibin Wu, **Xuanjun Chen**, Yi-Cheng Lin, Jiawei Du, Kai-Wei Chang, Ke-Han Lu, Alexander Liu, Ho-Lam Chung, Yuan-Kuei Wu, Dongchao Yang, Songxiang Liu, Yi-Chiao Wu, Xu Tan, James Glass, Shinji Watanabe, and Hung-yi Lee “[Codec-SUPERB @ SLT 2024: A lightweight benchmark for neural codec models](#),” *in the 2024 IEEE Spoken Language Technology Workshop (IEEE SLT 2024), Macao, China, 2024.*
- [12] Jiawei Du, I-Ming Lin, I-Hsiang Chiu, **Xuanjun Chen**, Haibin Wu, Wenze Ren, Yu Tsao, Hung-yi Lee, Jyh-Shing Roger Jang “[DFADD: The Diffusion and Flow-Matching based Audio Deepfake Dataset](#),” *in the 2024 IEEE Spoken Language Technology Workshop (IEEE SLT 2024), Macao, China, 2024.*
- [13] Hsuan-Yu Lin, **Xuanjun Chen**, Jyh-Shing Roger Jang “[Singer separation for karaoke content generation](#),” *in The 27th Oriental COCOSDA Conference (O-COCOSDA 2024), Hsinchu, Taiwan, Oct 2024.*
- [14] **Xuanjun Chen**<sup>†</sup>, Haibin Wu<sup>†</sup>, Helen Meng, Hung-yi Lee, Jyh-Shing Roger Jang “[Push-Pull: Characterizing the Adversarial Robustness for Audio-Visual Active Speaker Detection](#),” *in the 2022 IEEE Spoken Language Technology Workshop (IEEE SLT 2022), Doha, Qatar, Jan 2023.*
- [15] **Xuanjun Chen**<sup>†</sup>, Yen-Lun Liao<sup>†</sup>, Chung-Che Wang, Jyh-Shing Roger Jang “[Adversarial Speaker Distillation for Counter-measure Model on Automatic Speaker Verification](#),” *in Proc. 2nd Symposium on Security and Privacy in Speech Communication (SPSC 2022), Incheon, Korea, Sept 2022.*

## Open Source and Skills

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<b>Open Source</b>	Official repository of MTDVocaLiST model for Audio-Visual Synchronization task (Starred 24)
<b>Open Source</b>	Official repository of SingGraph model for SingFake Detection task (Starred 25, Fork 4)
<b>PLs and Toolkits</b>	Python, LaTeX, Shell; PyTorch, Huggingface, PyTorch Lightning, Numpy, Pandas, Matplotlib.
<b>Language</b>	Mandarin (native), Cantonese (native), English (fluent).